UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,835	09/12/2003	Mark J. Chiappetta	ISR-016-US	7708

24390 7590 06/22/2005

LUCASH, GESMER & UPDEGROVE, LLP
40 BROAD ST
SUITE 300
BOSTON, MA 02109

EXAMINER	
MARC, MCDIEUNEL	
ART UNIT	**PAPER NUMBER**
3661	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,835	CHIAPPETTA ET AL.	
	Examiner	Art Unit	
	McDieunel Marc	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9, 12-15, 17-25 and 28-38* is/are rejected.

7)☒ Claim(s) *10,11,16,26 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/21/04, 8/30/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-38 are presented for examination.

2. The abstract of the disclosure is objected to because of the word "means". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-9, 12-15, 17-25 and 28-38 are rejected under 35 U.S.C. 102(2) as being anticipated by **Jones *et al.*** (U.S. Pat. No. **6,809,490,B2**).

As per claims 1 and 31, Jones *et al.* teaches multi-mode coverage for an autonomous robot having a navigational control system for directly altering movement activity of a robotic device operating in a defined working area (col. 2, lines 35-40), comprising: a transmitting subsystem integrated in combination with the robotic device, the transmitting subsystem comprising means for emitting a number of directed beams to cover the defined working area (col. 10, lines 43-44), each directed beam having a

predetermined emission pattern (col. 16, lines 36-39, wherein reflective being interpreted as reflective beams); and a receiving subsystem functioning as a base station that includes a navigation control algorithm that defines a predetermined triggering event for the navigational control system and a set of detection units positioned within the defined working area (col. 16, lines 46-53), the detection units being positioned in a known aspectual relationship with respect to one another, the set of detection units being configured and operative to detect one or more of the directed beams emitted by the transmitting subsystem (col. 6, lines 28-38); and wherein the receiving subsystem is configured and operative to process the one or more detected directed beams under the control of the navigational control algorithm to determine whether the predetermined triggering event has occurred, and, if the predetermined triggering event has occurred transmit a control signal to the robotic device (col. 16, lines 36-45); wherein reception of the control signal by the robotic device causes the robotic device to implement a prescribed conduct that alters the movement activity of the robotic device (see fig. 14); each transmitting unit being configured and operative to emit a directed beam having a predetermined emission pattern at a unique operating frequency (col. 4, lines 14-19).

As per claims 2-9, 12-15, 17-25, 28-30 and 32-36, Jones *et al.* teaches multi-mode coverage for an autonomous robot wherein the emitting means comprises a mechanical sweeping transmitter configured and operative to sweep through a 360° azimuth while sequentially emitting to provide the number of directed beams (col. 12, lines 25-29); wherein the emitting means comprises a set of transmitting units integrated in combination with the robotic device so that the transmitting units have a predetermined spaced-apart relationship, and wherein the transmitting units of the set are operative to provide the number of directed beams (col. 12, lines 12-24, wherein measuring distance implies the use of directed beams); wherein the predetermined

emission pattern of the emitted directed beams and the number of beams are correlated so that the transmitting subsystem emulates an omnidirectional transmitting source covering the defined working area (col. 7, lines 61 – to – col. 8, line – 10, wherein x an y axis imply multidirectional); wherein the emitting means is configured and operative to emit the directed beams at a common operating frequency (col. 12, lines 12-14); wherein the emitting means is sequentially cycled on and off (col. 12, lines 40-41); wherein the transmitting subsystem and the receiving subsystem are synchronized for operation wherein a travel vector for the robotic device is determinable (col. 11, line 45 – to – line -11); wherein the one or more basic maneuvers are selected from a group of maneuvers consisting of clockwise turns, counterclockwise turns, forward movement, and aft movement (col. 16, lines 11-25).

Allowable Subject Matter

5. Claims 10-11, 16 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or fairly suggest with respect to claim 10, a navigational control system comprising initialize a timing sequence when the emitting means is cycled off, and then sequentially cycle the emitting means on and off so that the directed beams achieve peak signal strengths at different times with respect to the initialized timing sequence ...with respect to claim 26, a navigational control system

comprising receiving subsystem is configured and operative to segment the defined working area into a plurality of cells that define a grid map of the defined working area referenced to the receiving subsystem; process signals representative of detection of the one or more directed beams over a time interval to determine a set of instantaneous positions representing the movement activity of the robotic device ...with respect to claim 16, a navigational control system wherein the set of detection units comprises a first detection unit, a second detection unit, and a third detection unit, and wherein the first and second detection units are spaced-apart by a known angular distance, the second and third detection units are spaced-apart by a known angular distance, and the first and third detection units are spaced apart by a known angular distance in combination with the other features of the claimed invention.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (571) 272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

McDieunel Marc

Tuesday, May 31, 2005

MM/